



CERTIFICATE OF MAILING

whereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope, with sufficient postage, addressed to: Commissioner for Patents, Washington, D.C. 20231, on

August 5, 2002

Date of Deposit

Kent E. Genin, Reg. No. 37,834

Name of Applicant, Assignee or
Registered Representative

Signature

8/5/2002

Date of Signature

3762
BET
8.14.02
#4 | IDS

Our Case No.: 3614/63

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

A. Chow et al.

Serial No.: 10/056,793

Filing Date: January 23, 2002

For: METHODS FOR IMPROVING
DAMAGED RETINAL CELL
FUNCTION

Examiner: Unknown

Group Art Unit No.: 3762

RECEIVED

AUG 13 2002

INFORMATION DISCLOSURE STATEMENT

TECHNOLOGY CENTER R3700

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Pursuant to the obligation under 37 C.F.R. § 1.56 and in conformance with 37 C.F.R. § 1.97-1.99, Applicant hereby submits the following references for consideration by the Examiner. Copies of each have been enclosed along with the form PTO-1449.



U.S. PATENT DOCUMENTS

<u>Document No.</u>	<u>Date</u>	<u>Inventor(s)</u>
2,760,483	08/28/1956	Tassicker
3,594,823	07/27/1971	Collins
3,628,193	12/21/1971	Collins
3,766,311	10/16/1973	Boll
3,848,608	11/19/1974	Leonard
3,914,800	10/28/1975	Collins
4,001,867	01/04/1977	Kravitz et al.
4,211,474	07/08/1980	Le Goff
4,251,887	02/24/1981	Anis
4,272,910	06/16/1981	Danz
4,551,149	11/05/1985	Sciarra
4,600,004	07/15/1986	Lopez et al.
4,601,545	07/22/1986	Kern
4,628,933	12/16/1986	Michelson
4,679,572	07/14/1987	Baker, Jr.
4,750,498	06/14/1988	Graham
4,810,050	03/07/1989	Hooper
4,832,202	05/23/1989	Newman et al.
4,873,448	10/10/1989	Shirai
4,978,842	12/18/1990	Hinton et al.
5,016,633	05/21/1991	Chow
5,024,223	06/18/1991	Chow
5,109,844	05/05/1992	de Juan Jr. Et al.
5,130,528	07/14/1992	Phillips, Jr.
5,130,776	07/14/1992	Popovic et al.
5,159,927	11/03/1992	Schmid
5,223,728	06/29/1993	Gempe
5,256,882	10/26/1993	Miyasaka
5,338,991	08/16/1994	Lu
5,351,309	09/27/1994	Lee et al.
5,397,350	03/14/1995	Chow et al.
5,411,540	05/02/1995	Edell et al.
5,476,494	12/19/1995	Edell et al.
5,491,349	02/13/1996	Komoto et al.
5,556,423	09/17/1996	Chow et al.
5,648,655	07/15/1997	Rostoker
5,717,201	02/10/1998	Lin et al.
5,837,995	11/17/1998	Chow et al.
5,865,839	02/02/1999	Doorish
5,895,414	04/20/1999	Sanchez-Zambrano
5,895,415	04/20/1999	Chow et al.
5,935,155	08/10/1999	Humayun et al.

RECEIVED

AUG 13 2002

TECHNOLOGY CENTER H3700



<u>Document No.</u>	<u>Date</u>	<u>Inventor(s)</u>
5,944,747	08/31/1999	Greenberg et al.
6,032,062	02/29/2000	Nisch
6,035,236	05/08/2001	Jarding et al.
6,230,057 B1	05/08/2001	Chow et al.
6,298,270 B1	10/02/2001	Nisch et al.
6,347,250 B1	02/12/2002	Nisch et al.
6,389,317 B1	05/14/2002	Chow et al.

FOREIGN REFERENCES

<u>Document No.</u>	<u>Date</u>	<u>Country</u>
DE 195 29 371 C2	02/13/97	Germany
GB 2 229 543 A	09/26/90	Great Britain
EP 0 084 621 A2	11/23/82	EPO
EP 0 233 789	08/26/87	EPO
EP 0 501 904 A2	09/02/92	EPO

RECEIVED

AUG 13 2002

TECHNOLOGY CENTER R3700

OTHER ART REFERENCES

Abrams, Dr. Susan B., "Implanted photodiodes could restore lost vision", *Biophotonics Research*, 1997, 2 pages.

Acheson, A., P.A. Barker, R.F. Alderson, F.D. Miller, et al., "Detection of Brain-Derived Neurotrophic Factor-Like Activity in Fibroblasts and Schwann Cells: Inhibition by Antibodies to NGF", *Neuron*, Vol. 7, 1991, pp 265-75.

Ando, Haruhisa, et al. "Design Consideration and Performance of a New MOS Imaging Device", *IEEE*, 1985, 6 pages.

Armington, J.C., Brigell, M., "Effects of Stimulus Location and Pattern Upon the Visually Evoked Cortical Potential and the Electroretinogram," *Intern. J. Neuroscience*, Vol. 14, 1981, pp 169-178.

Baylor, D.A., Fuortes, M.G.F., "Electrical Responses of Single Cones in the Retina of the Turtle," *J. Physiol*, Vol. 207, 1970, pp 77-92.

Bergmann-Schaefer, "Lehrbuch der Experimentalphysik" (Textbook of Experimental Physics), vol. II, "Electricity and Magnetism" by Prof. Dr. -Ing. H. Gobrecht, 1971, 3 pp. plus translation.

Bobsch, M.D., Joseph M. and Grosser, Ph.D., Morton "Newer Repair at the AXOM Level: A Merger of Microsurgery and Microelectronics," VCH Publishers, Inc., 1967.

Boettner, E.A., Wolter, J.R., "Transmission of the Ocular Media," *Investigative Ophthalmology*, Vol. 1, 1962, pp 776-783.

Bosco, A., and Linden, R., "BDNF and NT-4 Differentially Modulate Neurite Outgrowth in Developing Retinal Ganglion Cells", *J Neurosci Res*. Vol. 57, 1999, pp 759-69.

Brady, G.S., Clauser, H.R., *Materials Handbook, Thirteenth Edition*, New York, McGraw-Hill, 1991, pp 739-740.

Brindley, G.S., "The Site of Electrical Excitation of the Human Eye," *J. Physiol.*, Vol. 127, 1955, pp 189-200.

Brindley, G.S., "Beats Produced by Simultaneous Stimulation of the Human Eye with Intermittent Light and Intermittent or Alternating Electric Current," *J. Physiol.*, Vol. 164, 1962, pp 156-167.

Brown, M.G. et al., "Monolithically Integrated 1 x 12 Array of Planar InGaAs/InP Photodiodes," *Journal of Lightwave Technology*, Vol. LT-4, No. 3, March 1986, pp. 283-286.

Caleo, M., Lodovichi, C., and Maffei, L., "Effects of Nerve Growth Factor on Visual Cortical Plasticity Require Afferent Electrical Activity", *Eur. J. Neurosci.*, Vol. 11, 1999, pp 2979-84.

Carmignoto, G., Maffei, L., Candeo, P., Canella, R. and Comelli, C., "Effect of NGF on the Survival of Rat Retinal Ganglion Cells Following Optic Nerve Section", *J. Neurosci.*, Vol. 9, 1989, pp 1263-72.

Chapin, D.M., et al., "A New Silicon *p-n* Junction Photocell for Converting Solar Radiation into Electrical Power," Letters to the Editor, *Journal of Applied Physics*, Vol. 25, 1954, pp 676-7.

Chow, A.Y., "Electrical Stimulation of the Rabbit Retina with Subretinal Electrodes and High Density Microphotodiode Array Implants," ARVO Abstracts, *Invest. Ophthalmol. Vis. Sci.* 199334 (Suppl), page 835.

Chow, A.Y., Pardue, M.T., Chow, V.Y., Peyman, G.A., et al., "Implantation of Silicon Chip Microphotodiode Arrays into the Cat Subretinal Space", *IEEE Trans. Neu. Syst. Rehabil. Eng.*, Vol. 9, 2001, pp 86-95.

Chow, A.Y., and Chow, V.Y., "Subretinal Electrical Stimulation of the Rabbit Retina", *Neurosci. Lett.* Vol. 225, 1997, pp 13-16.

Chow, A.Y., and Peachey, N., "The Subretinal Microphotodiode Array Retinal Prosthesis II", *Ophthalm. Res.*, Vol. 31, 1999, page 246.

Cui, Q., So, K.F., and Yip, H.K., "Major Biological Effects of Neurotrophic Factors on Retinal Ganglion Cells in Mammals", *Biol. Sig. Recept.*, Vol. 7, 1998, pp 220-226.

Curcio, C.A., Sloan, K.R., Kalina, R.E., Hendrickson, A.E., "Human Photoreceptor Topography," *J Comp. Neuro.*, Vol. 292, 1990, pp 497-523.

Dawson, W.W., Radtke, N.D., "The Electrical Stimulation of the Retina by Indwelling Electrodes," *Invest. Ophthalmol. Visual Sci.*, Vol. 16, 1977, pp 249-252.

Dooley, D.M., Sharkey, J., Keller, W., and Kasprak, W., "Treatment of Demyelinating and Degenerative Diseases by Electro Stimulation of the Spinal Cord", *Med. Prog. Technol.*, Vol. 6, 1978, pp 1-14.

Dowling, J.E., Ripps, H., Visual Adaptation in the Retina of the Skate," *J Gen Physiol.*, Vol. 56, 1970, pp 491-520.

Eagle, R.C., Lucier, A.C., Bernardino, V.B., *et al.*, "Retinal Pigment Epithelial Abnormalities in Fundus Flavimaculatus," *Ophthalmol.*, Vol. 87, 1980; pp 1189-1200.

Evans, R.D., Foltz, D., and Foltz, K., "Electrical Stimulation with Bone and Wound Healing", *Clin. Podiatr. Med. Surg.*, Vol. 18, 2001, pp 79-95.

Gibiliscos, S., and Sclater, N., Encyclopedia of Electronics, 2d Ed., 1990, pp. 640-645.

Fenwick, P.B.C., Stone, S.A., Bushman, J., Enderby, D., "Changes in the Pattern Reversal Visual Evoked Potential as a Function of Inspired Nitrous Oxide Concentration," *Electroencephalogr. Clin. Neurophysiol.*, Vol. 57, 1984, pp 57178-183.

John B. Flynn, et al. "Total Active Area Silicon Photodiode Array", 1964, 3 pages.

Frasson, M., Picaud, S., Leveillard, T., Simonutti, M., *et al.*, "Glial Cell Line-Derived Neurotrophic Factor Induces Histologic and Functional Protection of Rod Photoreceptors in the rd/rd Mouse", *Invest. Ophthalmol. Visual Sci.*, Vol. 40, 1999, pp 2724-34.

Graeme, J., "Position-Sensing Photodiode Amplifiers," Ch. 10, 12 pages.

Granit, R., Helme, T., "Changes in Retinal Excitability Due to Polarization and Some Observations on the Relation Between the Processes in Retina and Nerve," *J. Neurophysiol.*, Vol. 2, 1939, pp 556-565.

Hagins, W.A., Penn, R.D., Yoshikami, S., "Dark Current and Photocurrent in Retinal Rods," *J. Biophys.*, Vol. 10, 1970, pp 380-412.

Hergert, K., "Detectors: Expanded Photodetector Choices Pose Challenges for Designers", *The Photonics Design and Applications Handbook* (1996).

Humayun, M.S., Propst, R.H., Hickinbotham, D., de Juan E., Jr., Dagnelie G., "Visual Sensations Produced by Electrical Stimulation of the Retinal Surface in Patients with End-Stage Retinitis Pigmentosa (RP)," *ARVO Abstracts, Invest. Ophthalmol. Vis. Sci.*, Vol. 34 Suppl, 1993, page 835.

Humayun, M., Propst R., de Juan, E., *et al.*, "Bipolar Surface Electrical Stimulation of the Vertebrate Retina," *Arch. Ophthalmol.*, Vol. 112, 1994, pp 110-116.

Kane, W.J., "Direct Current Electrical Bone Growth Stimulation for Spinal Fusion", *Spine*, Vol. 13, 1988, pp 363-365.

Kataoka, S., "An Attempt Towards an Artificial Retina: 3-D IC Technology for an Intelligent Image Sensor," *Transducers '85: International Conference on Solid-State Sensors and Actuators 1985*, pp. 440-442.

Klinke, R., Kral, A., Heid, S., Tillein, J., and Hartmann, R., "Recruitment of the Auditory Cortex in Congenitally Deaf Cats by Long-Term Cochlear Electrostimulation", *Science*, Vol. 285, 1999, pp. 1729-1733.

Knighton, R.W., "An Electrically Evoked Slow Potential of the Frog's Retina. I. Properties of Response," *J. Neurophysiol.*, Vol. 38, 1975, pp 185-197.

Koyama, S., Haruyama, T., Kobatake, E., and Aizawa, M., "Electrically Induced NGF Production by Astroglial Cells", *Nature Biotechnol.*, Vol. 15, 1997, pp 164-166.

Lagey, C.L., Roelofs, J.M., Janssen, L.W.M., Breedijk, M., *et al.*, "Electrical Stimulation of Bone Growth with Direct Current", *Clin. Orthop.*, No. 204, 1986, pp 303-312.

Lambiase, A., and Aloe, L., "Nerve Growth Factor Delays Retinal Degeneration in C3H Mice", *Graefe's Arch. Clin. Exp. Ophthalmol.*, Vol. 234, 1996, pp 96-100.

Leake, P.A., Hradek, G.T., and Snyder, R.L., "Chronic Electrical Stimulation by a Cochlear Implant Promotes Survival of Spiral Ganglion Neurons after Neonatal Deafness", *J. Comp. Neurol.*, Vol. 412, 1999, pp 543-562.

Leake, P.A., Hradek, G.T., Rebscher, S.J., and Snyder, R.L., "Chronic Intracochlear Electrical Stimulation Induces Selective Survival of Spiral Ganglion Neurons in Neonatally Deafened Cats", *Hear. Res.*, Vol. 54, 1991, pp 251-271.

Lin, H-C., *et al.*, "The Vertical Integration of Crystalline NMOS and Amorphous Orientational Edge Detector" IEEE Briefs, 1992, 3 pages.

Melen, R.D., *et al.*, "A Transparent Electrode CCD Image Sensor for a Reading Aid for the Blind," *IEEE Journal of Solid-State Circuits*, Vol. SC-9, No.2, April 1974, pp. 41-48.

Narayanan, M.V., Rizzo, J.F., Edell, D., *et al.*, "Development of a Silicon Retinal Implant: Cortical Evoked Potentials Following Focal Stimulation of the Rabbit Retina with Light and Electricity," ARVO Abstracts, *Invest. Ophthalmol. Vis. Sci.*, Vol. 35 (Suppl), 1994, page 1380.

Neely, M.D., and Nicholls, J.G., "Electrical Activity, Growth Cone Motility and the Cytoskeleton", *J. Exp. Biol.* Vol. 198, 1995, pp 1433-1446.

Pagon, R.A., "Retinitis Pigmentosa," *Survey Ophthalmol.*, Vol. 33, 1988, pp 137-177.

Paton, D., Goldberg, M.F., *Management of Ocular Injuries*, Philadelphia, W.B. Saunders Co., 1976, pp 134-135.

Peachey, N.S., and Chow, A.Y., "Subretinal Implantation of Semiconductor-Based Photodiodes: Progress and Challenges", *J. Rehabil. Res. Develop.*, Vol. 36, No. 4, 1999, pp 1-7.

The Penguin Dictionary of Electronics, Editor: Illingworth, V., Young, C., Market House Books Ltd., 1988, pp. 410-413.

Politis, M.J., Zanakis, M.F., and Albala, B.J., "Facilitated Regeneration in the Rat Peripheral Nervous System Using Applied Electric Fields", *J. Trauma.*, Vol. 28, 1988, pp 1375-1381.

Politis, M.J., Zanakis, M.F., and Albala, B.J., "Mammalian Optic Nerve Regeneration Following the Application of Electric Fields", *J. Trauma.*, 1988, Vol. 28 pp 1548-1552.

Politis, M.J., and Zanakis, M.F., "Short Term Efficacy of Applied Electric Fields in the Repair of the Damaged Rodent Spinal Cord: Behavioral and Morphological Results", *Neurosurgery*, Vol. 23, 1988, pp 582-588.

Politis, M.J., and Zanakis, M.F., "The Short-Term Effects of Delayed Application of Electric Fields in the Damaged Rodent Spinal Cord", *Neurosurgery*, Vol. 25, 1989, pp 71-75.

Politis, M.J., and Zanakis, M.F., "Treatment of the Damaged Rat Hippocampus with a Locally Applied Electric Field:", *Exp. Brain Res.*, Vol. 71, 1988, pp 223-226.

Potts, A.M., Inoue J., Buffum D., "The Electrically Evoked Response of the Visual System (EER)," *Invest. Ophthalmol Vis Sci.*, 1968; 7:269-278.

Reh, T.A., McCabe, K., Kelley, M.W., and Bermingham-McDonogh, O., "Growth Factors in the Treatment of Degenerative Retinal Disorders", *Ciba Found. Symp.*, Vol. 196, 1996, pp 120-131.

Robblee, L.S., *Electrochemical Guidelines for Selection of Protocols and Electrode Materials for Neural Stimulation*, Ch. 2, Renner Learning Resource Center (undated), pp 25-66.

Rovamo, J., Virsu, V., "An Estimation and Application of the Human Cortical Magnification Factor," *Exp Brain Res.*, Vol. 37, 1979, pp 495-510.

Rubin, M.L., *Optics for Clinicians*, Gainesville, TRIAD Scientific Publishers, 1974, pp 119-123.

Shannon, R.V., "A Model of Safe Levels for Electrical Stimulation," *IEEE Transactions Biomed. Eng.*, Vol. 39, 1992, pp 424-426.

Smith, J., "Creating a Bionic Eye", ABC News, 11/5/98, 3 pages.

Stone, J.L., Barlow, W.E., Humayun, M.S., de Juan, E., Jr., Milam, A.H., "Morphometric Analysis of Macular Photoreceptor and Ganglion Cells in Retinas with Retinitis Pigmentosa," *Arch. Ophthalmol.*, Vol. 110, 1992, pp 1634-1639.

Sze, S.M., "Physics of Semiconductor Devices", 2nd Ed., A Wiley-Interscience Publication, John Wiley & Sons, (undated).

Tasman, E., ed. *Duane's Foundations of Clinical Ophthalmology, Volume 3*, Philadelphia, Lippincott, 1992; chapter 13:20-25, chapter 60:1-112.

Terr, L.I., Linthicum, F.H., House, W.F., "Histopathologic Study of the Cochlear Nuclei After 10 Years of Electrical Stimulation of the Human Cochlea," *Am. J. Otology.*, Vol. 9, 1988, pp 1-7.

Tomita, T., "Electrical Activity of Vertebrate Photoreceptor," *Q. Rev. Biophys.*, Vol. 3, 1970, pp. 179-222.

Zrenner, E., *et al.*, "The Development of Subretinal Microphotodiodes for Replacement of Degenerated Photoreceptors", *Ophthalmic Res.*, 1997, pp. 269-280.

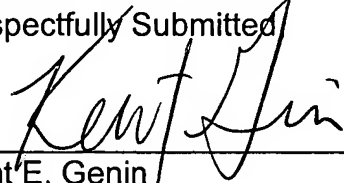
Chow, A.Y., and Chow, V.Y., Copy of U.S. application serial No. 09/564,841 filed on May 4, 2002, 29 pages.

EXPLANATION OF THE REFERENCES

As of the day of filing of this information disclosure statement, a first office action on the merits has not been received by the undersigned. Accordingly, no fee for consideration of the information provided with this disclosure statement is included herewith, as permitted by 37 C.F.R. § 1.97(b)(3). However, if an office action on the merits is mailed on a date prior hereto, Applicant hereby requests and authorizes the Commissioner to charge Deposit Account 23-1925 for the appropriate fee of \$180 as set forth in 37 C.F.R. § 1.97(c) for consideration of the information set forth in this disclosure statement.

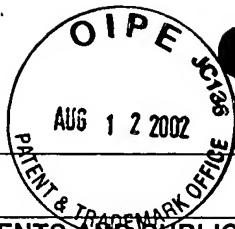
Applicant requests to have these references included in the record of this application. Applicant further requests that the Examiner review the entire disclosure of each reference. Applicant does not represent any of these references to be prior art and Applicant reserves the right to disqualify any references by the showing of an earlier date of invention, if appropriate.

Respectfully Submitted

A handwritten signature in cursive script, appearing to read "Kent E. Genin", written over a horizontal line.

Kent E. Genin
Reg. No. 37,834
Attorney for Applicant

BRINKS HOFER GILSON & LIONE
P.O. Box 10395
Chicago, IL 60610
(312) 321-7732



FORM PTO-1449	SERIAL NO. 10/056,793	CASE NO. 3614/63
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE January 23, 2002	GROUP ART UNIT 3762
(use several sheets if necessary)		APPLICANT(S): A. Chow et al.

REFERENCE DESIGNATION U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
	A1	2,760,483	08/28/1956	Tassicker		
	A2	3,594,823	07/27/1971	Collins		
	A3	3,628,193	12/21/1971	Collins		
	A4	3,766,311	10/16/1973	Boll		
	A5	3,848,608	11/19/1974	Leonard		
	A6	3,914,800	10/28/1975	Collins		
	A7	4,001,867	01/04/1977	Kravitz et al.		
	A8	4,211,474	07/08/1980	Le Goff		
	A9	4,251,887	02/24/1981	Anis		
	A10	4,272,910	06/16/1981	Danz		
	A11	4,551,149	11/05/1985	Sciarra		
	A12	4,600,004	07/15/1986	Lopez et al.		
	A13	4,601,545	07/22/1986	Kern		
	A14	4,628,933	12/16/1986	Michelson		
	A15	4,679,572	07/14/1987	Baker, Jr.		
	A16	4,750,498	06/14/1988	Graham		
	A17	4,810,050	03/07/1989	Hooper		
	A18	4,832,202	05/23/1989	Newman et al.		
	A19	4,873,448	10/10/1989	Shirai		
	A20	4,978,842	12/18/1990	Hinton et al.		
	A21	5,016,633	05/21/1991	Chow		
	A22	5,024,223	06/18/1991	Chow		
	A23	5,109,844	05/05/1992	de Juan Jr. et al.		
	A24	5,130,528	07/14/1992	Phillips, Jr.		
	A25	5,130,776	07/14/1992	Popovic et al.		
	A26	5,159,927	11/03/1992	Schmid		
	A27	5,223,728	06/29/1993	Gempe		
	A28	5,256,882	10/26/1993	Miyasaka		
	A29	5,338,991	08/16/1994	Lu		
	A30	5,351,309	09/27/1994	Lee et al.		
	A31	5,397,350	03/14/1995	Chow et al.		
	A32	5,411,540	05/02/1995	Edell et al.		
	A33	5,476,494	12/19/1995	Edell et al.		
	A34	5,491,349	02/13/1996	Komoto et al.		
	A35	5,556,423	09/17/1996	Chow et al.		
	A36	5,648,655	07/15/1997	Rostoker		
	A37	5,717,201	02/10/1998	Lin et al.		
	A38	5,837,995	11/17/1998	Chow et al.		

RECEIVED
AUG 13 2002
TECHNOLOGY CENTER R3700

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	SERIAL NO. 10/056,793	CASE NO. 3614/63
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE January 23, 2002	GROUP ART UNIT 3762
(use several sheets if necessary)		APPLICANT(S): A. Chow et al.

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
	A39	5,865,839	02/02/1999	Doorish		
	A40	5,895,414	04/20/1999	Sanchez-Zambrano		
	A41	5,895,415	04/20/1999	Chow et al.		
	A42	5,935,155	08/10/1999	Humayun et al.		
	A43	5,944,747	08/31/1999	Greenberg et al.		
	A44	6,032,062	02/29/2000	Nisch		
	A45	6,035,236	05/08/2001	Jarding et al.		
	A46	6,230,057 B1	05/08/2001	Chow et al.		
	A47	6,298,270 B1	10/02/2001	Nisch et al.		
	A48	6,347,250 B1	02/12/2002	Nisch et al.		
	A49	6,389,317 B1	05/14/2002	Chow et al.		

FOREIGN PATENT DOCUMENTS

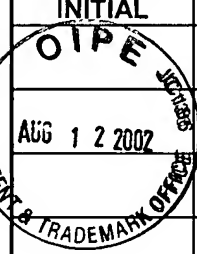
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES	NO
	A50	DE 195 29 371 C2	02/13/97	Germany			
	A51	GB 2 229 543 A	09/26/90	Great Britain			
	A52	EP 0 084 621 A2	11/23/82	EPO			
	A53	EP 0 233 789	08/26/87	EPO			
	A54	EP 0 501 904 A2	09/02/92	EPO			

EXAMINER INITIAL	OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)	
	A55	Abrams, Dr. Susan B., "Implanted photodiodes could restore lost vision", <i>Biophotonics Research</i> , 1997, 2 pages.
	A56	Acheson, A., P.A. Barker, R.F. Alderson, F.D. Miller, et al., "Detection of Brain-Derived Neurotrophic Factor-Like Activity in Fibroblasts and Schwann Cells: Inhibition by Antibodies to NGF", <i>Neuron</i> , Vol. 7, 1991, pp 265-75.
	A57	Ando, Haruhisa, et al. "Design Consideration and Performance of a New MOS Imaging Device", <i>IEEE</i> , 1985, 6 pages.
	A58	Armington, J.C., Brigell, M., "Effects of Stimulus Location and Pattern Upon the Visually Evoked Cortical Potential and the Electroretinogram," <i>Intern. J. Neuroscience</i> , Vol. 14, 1981, pp 169-178.
	A59	Baylor, D.A., Fuortes, M.G.F., "Electrical Responses of Single Cones in the Retina of the Turtle," <i>J. Physiol</i> , Vol. 207, 1970, pp 77-92.
	A60	Bergmann-Schaefer, "Lehrbuch der Experimentalphysik" (Textbook of Experimental Physics), vol. II, "Electricity and Magnetism" by Prof. Dr. -Ing. H. Gobrecht, 1971, 3 pp. plus translation.
****	A61	Bobsch, M.D., Joseph M. and Grosser, Ph.D., Morton "Newer Repair at the AXOM Level: A Merger of Microsurgery and Microelectronics," VCH Publishers, Inc., 1967.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

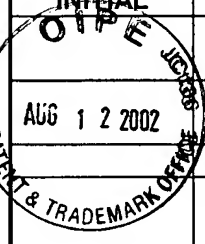
FORM PTO-1449	SERIAL NO. 10/056,793	CASE NO. 3614/63
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE January 23, 2002	GROUP ART UNIT 3762
(use several sheets if necessary)		APPLICANT(S): A. Chow et al.

EXAMINER INITIAL	OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)	
	A62	Boettner, E.A., Wolter, J.R., "Transmission of the Ocular Media," <i>Investigative Ophthalmology</i> , Vol. 1, 1962, pp 776-783.
	A63	Bosco, A., and Linden, R., "BDNF and NT-4 Differentially Modulate Neurite Outgrowth in Developing Retinal Ganglion Cells", <i>J Neurosci Res.</i> Vol. 57, 1999, pp 759-69.
	A64	Brady, G.S., Clauser, H.R., <i>Materials Handbook, Thirteenth Edition</i> , New York, McGraw-Hill, 1991, pp 739-740.
	A65	Brindley, G.S., "The Site of Electrical Excitation of the Human Eye," <i>J. Physiol.</i> , Vol. 127, 1955, pp 189-200.
	A66	Brindley, G.S., "Beats Produced by Simultaneous Stimulation of the Human Eye with Intermittent Light and Intermittent or Alternating Electric Current," <i>J. Physiol.</i> , Vol. 164, 1962, pp 156-167.
	A67	Brown, M.G. et al., "Monolithically Integrated 1 x 12 Array of Planar InGaAs/InP Photodiodes," <i>Journal of Lightwave Technology</i> , Vol. LT-4, No. 3, March 1986, pp. 283-286.
	A68	Caleo, M., Lodovichi, C., and Maffei, L., "Effects of Nerve Growth Factor on Visual Cortical Plasticity Require Afferent Electrical Activity", <i>Eur. J. Neurosci.</i> , Vol. 11, 1999, pp 2979-84.
	A69	Carmignoto, G., Maffei, L., Candeo, P., Canella, R. and Comelli, C., "Effect of NGF on the Survival of Rat Retinal Ganglion Cells Following Optic Nerve Section", <i>J. Neurosci.</i> , Vol. 9, 1989, pp 1263-72.
	A70	Chapin, D.M., et al., "A New Silicon p-n Junction Photocell for Converting Solar Radiation into Electrical Power," Letters to the Editor, <i>Journal of Applied Physics</i> , Vol. 25, 1954, pp 676-7.
	A71	Chow, A.Y., "Electrical Stimulation of the Rabbit Retina with Subretinal Electrodes and High Density Microphotodiode Array Implants," <i>ARVO Abstracts, Invest. Ophthalmol. Vis. Sci.</i> 199334 (Suppl), page 835.
	A72	Chow, A.Y., Pardue, M.T., Chow, V.Y., Peyman, G.A., et al., "Implantation of Silicon Chip Microphotodiode Arrays into the Cat Subretinal Space", <i>IEEE Trans. Neu. Syst. Rehabil. Eng.</i> , Vol. 9, 2001, pp 86-95.
	A73	Chow, A.Y., and Chow, V.Y., "Subretinal Electrical Stimulation of the Rabbit Retina", <i>Neurosci. Lett.</i> Vol. 225, 1997, pp 13-16.
	A74	Chow, A.Y., and Peachey, N., "The Subretinal Microphotodiode Array Retinal Prosthesis II", <i>Ophthalm. Res.</i> , Vol. 31, 1999, page 246.
	A75	Cui, Q., So, K.F., and Yip, H.K., "Major Biological Effects of Neurotrophic Factors on Retinal Ganglion Cells in Mammals", <i>Biol. Sig. Recept.</i> , Vol. 7, 1998, pp 220-226.
	A76	Curcio, C.A., Sloan, K.R., Kalina, R.E., Hendrickson, A.E., "Human Photoreceptor Topography," <i>J Comp. Neuro.</i> , Vol. 292, 1990, pp 497-523.
	A77	Dawson, W.W., Radtke, N.D., "The Electrical Stimulation of the Retina by Indwelling Electrodes," <i>Invest. Ophthalmol. Visual Sci.</i> , Vol. 16, 1997, pp 249-252.
	A78	Dooley, D.M., Sharkey, J., Keller, W., and Kasprak, W., "Treatment of Demyelinating and Degenerative Diseases by Electro Stimulation of the Spinal Cord", <i>Med. Prog. Technol.</i> , Vol. 6, 1978, pp 1-14.
	A79	Dowling, J.E., Ripps, H., Visual Adaptation in the Retina of the Skate," <i>J Gen Physiol.</i> , Vol. 56, 1970, pp 491-520.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	SERIAL NO. 10/056,793	CASE NO. 3614/63
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE January 23, 2002	GROUP ART UNIT 3762
(use several sheets if necessary)		APPLICANT(S): A. Chow et al.

EXAMINER INITIAL	OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)	
	A80	Eagle, R.C., Lucier, A.C., Bernardino, V.B., et al., "Retinal Pigment Epithelial Abnormalities in Fundus Flavimaculatus," <i>Ophthalmol.</i> , Vol. 87, 1980; pp 1189-1200.
	A81	Evans, R.D., Foltz, D., and Foltz, K., "Electrical Stimulation with Bone and Wound Healing", <i>Clin. Podiatr. Med. Surg.</i> , Vol. 18, 2001, pp 79-95.
	A82	Gibiliscos, S., and Sclater, N., <i>Encyclopedia of Electronics</i> , 2d Ed., 1990, pp. 640-645.
	A83	Fenwick, P.B.C., Stone, S.A., Bushman, J., Enderby, D., "Changes in the Pattern Reversal Visual Evoked Potential as a Function of Inspired Nitrous Oxide Concentration," <i>Electroencephalogr. Clin. Neurophysiol.</i> , Vol. 57, 1984, pp 57178-183.
	A84	John B. Flynn, et al. "Total Active Area Silicon Photodiode Array", 1964, 3 pages.
	A85	Frasson, M., Picaud, S., Leveillard, T., Simonutti, M., et al., "Glial Cell Line-Derived Neurotrophic Factor Induces Histologic and Functional Protection of Rod Photoreceptors in the rd/rd Mouse", <i>Invest. Ophthalmol. Visual Sci.</i> , Vol. 40, 1999, pp 2724-34.
	A86	Graeme, J., "Position-Sensing Photodiode Amplifiers," Ch. 10, 12 pages
	A87	Granit, R., Helme, T., "Changes in Retinal Excitability Due to Polarization and Some Observations on the Relation Between the Processes in Retina and Nerve," <i>J. Neurophysiol.</i> , Vol. 2, 1939, pp 556-565.
	A88	Hagins, W.A., Penn, R.D., Yoshikami, S., "Dark Current and Photocurrent in Retinal Rods," <i>J. Biophys.</i> , Vol. 10, 1970, pp 380-412.
	A89	Hergert, K., "Detectors: Expanded Photodetector Choices Pose Challenges for Designers", <i>The Photonics Design and Applications Handbook</i> (1996).
	A90	Humayun, M.S., Propst, R.H., Hickinbotham, D., de Juan E., Jr., Dagnelie G., et al., "Visual Sensations Produced by Electrical Stimulation of the Retinal Surface in Patients with End-Stage Retinitis Pigmentosa (RP)," <i>ARVO Abstracts, Invest. Ophthalmol. Vis. Sci.</i> , Vol. 34, Suppl, 1993, page 835.
	A91	Humayun, M., Propst R., de Juan, E., et al., "Bipolar Surface Electrical Stimulation of the Vertebrate Retina," <i>Arch. Ophthalmol.</i> , Vol. 112, 1994, pp 110-116.
		Kane, W.J., "Direct Current Electrical Bone Growth Stimulation for Spinal Fusion", <i>Spine</i> , Vol. 13, 1988, pp 363-365.
	A92	Kataoka, S., "An Attempt Towards an Artificial Retina: 3-D IC Technology for an Intelligent Image Sensor," <i>Transducers '85: International Conference on Solid-State Sensors and Actuators 1985</i> , pp. 440-442.
	A93	Klinke, R., Kral, A., Heid, S., Tillein, J., and Hartmann, R., "Recruitment of the Auditory Cortex in Congenitally Deaf Cats by Long-Term Cochlear Electrostimulation", <i>Science</i> , Vol. 285, 1999, pp. 1729-1733.
	A94	Knighton, R.W., "An Electrically Evoked Slow Potential of the Frog's Retina. I. Properties of Response," <i>J. Neurophysiol.</i> , Vol. 38, 1975, pp 185-197.
	A95	Koyama, S., Haruyama, T., Kobatake, E., and Aizawa, M., "Electrically Induced NGF Production by Astroglial Cells", <i>Nature Biotechnol.</i> , Vol. 15, 1997, pp 164-166.
	A96	Lagey, C.L., Roelofs, J.M., Janssen, L.W.M., Breedijk, M., et al., "Electrical Stimulation of Bone Growth with Direct Current", <i>Clin. Orthop.</i> , No. 204, 1986, pp 303-312.
	A97	Lambiase, A., and Aloe, L., "Nerve Growth Factor Delays Retinal Degeneration in C3H Mice", <i>Graefe's Arch. Clin. Exp. Ophthalmol.</i> , Vol. 234, 1996, pp 96-100.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	SERIAL NO. 10/056,793	CASE NO. 3614/63
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE January 23, 2002	GROUP ART UNIT 3762
(use several sheets if necessary)	APPLICANT(S): A. Chow et al.	


RECEIVED

EXAMINER INITIAL	OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)	
	A98	Leake, P.A., Hradek, G.T., and Snyder, R.L., "Chronic Electrical Stimulation by a Cochlear Implant Promotes Survival of Spiral Ganglion Neurons after Neonatal Deafness," <i>Comp. Neurol.</i> , Vol. 412, 1999, pp 543-562.
	A99	Leake, P.A., Hradek, G.T., Rebscher, S.J., and Snyder, R.L., "Chronic Intracochlear Electrical Stimulation Induces Selective Survival of Spiral Ganglion Neurons in Neonatally Deafened Cats", <i>Hear. Res.</i> , Vol. 54, 1991, pp 251-271.
	A100	Lin, H-C., et al., "The Vertical Integration of Crystalline NMOS and Amorphous Orientational Edge Detector" IEEE Briefs, 1992, 3 pages.
	A101	Melen, R.D., et al., "A Transparent Electrode CCD Image Sensor for a Reading Aid for the Blind," <i>IEEE Journal of Solid-State Circuits</i> , Vol. SC-9, No.2, April 1974, pp. 41-48.
	A102	Narayanan, M.V., Rizzo, J.F., Edell, D., et al., "Development of a Silicon Retinal Implant: Cortical Evoked Potentials Following Focal Stimulation of the Rabbit Retina with Light and Electricity," <i>ARVO Abstracts, Invest. Ophthalmol. Vis. Sci.</i> , Vol. 35 (Suppl), 1994, page 1380.
	A103	Neely, M.D., and Nicholls, J.G., "Electrical Activity, Growth Cone Motility and the Cytoskeleton", <i>J. Exp. Biol.</i> Vol. 198, 1995, pp 1433-1446.
	A104	Pagon, R.A., "Retinitis Pigmentosa," <i>Survey Ophthalmol.</i> , Vol. 33, 1988, pp 137-177.
	A105	Paton, D., Goldberg, M.F., <i>Management of Ocular Injuries</i> , Philadelphia, W.B. Saunders Co., 1976, pp 134-135.
	A106	Peachey, N.S., and Chow, A.Y., "Subretinal Implantation of Semiconductor-Based Photodiodes: Progress and Challenges", <i>J. Rehabil. Res. Develop.</i> , Vol. 36, No. 4, 1999, pp 1-7.
	A107	The Penguin Dictionary of Electronics, Editor: Illingworth, V., Young, C., Market House Books Ltd., 1988, pp. 410-413.
	A108	Politis, M.J., Zanakakis, M.F., and Albala, B.J., "Facilitated Regeneration in the Rat Peripheral Nervous System Using Applied Electric Fields", <i>J. Trauma.</i> , Vol. 28, 1988, pp 1375-1381.
	A109	Politis, M.J., Zanakakis, M.F., and Albala, B.J., "Mammalian Optic Nerve Regeneration Following the Application of Electric Fields", <i>J. Trauma.</i> , 1988, Vol. 28 pp 1548-1552.
	A110	Politis, M.J., and Zanakakis, M.F., "Short Term Efficacy of Applied Electric Fields in the Repair of the Damaged Rodent Spinal Cord: Behavioral and Morphological Results", <i>Neurosurgery</i> , Vol. 23, 1988, pp 582-588.
	A111	Politis, M.J., and Zanakakis, M.F., "The Short-Term Effects of Delayed Application of Electric Fields in the Damaged Rodent Spinal Cord", <i>Neurosurgery</i> , Vol. 25, 1989, pp 71-75.
	A112	Politis, M.J., and Zanakakis, M.F., "Treatment of the Damaged Rat Hippocampus with a Locally Applied Electric Field", <i>Exp. Brain Res.</i> , Vol. 71, 1988, pp 223-226.
	A113	Potts, A.M., Inoue J., Buffum D., "The Electrically Evoked Response of the Visual System (EER)," <i>Invest. Ophthalmol Vis Sci.</i> , 1968; 7:269-278.
	A114	Reh, T.A., McCabe, K., Kelley, M.W., and Bermingham-McDonogh, O., "Growth Factors in the Treatment of Degenerative Retinal Disorders", <i>Ciba Found. Symp.</i> , Vol. 196, 1996, pp 120-131.
	A115	Robblee, L.S., Electrochemical Guidelines for Selection of Protocols and Electrode Materials for Neural Stimulation, Ch. 2, Renner Learning Resource Center (undated), pp 25-66.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	SERIAL NO. 10/056,793	CASE NO. 3614/63
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE January 23, 2002	GROUP ART UNIT 3762
(use several sheets if necessary)	APPLICANT(S): A. Chow et al.	

EXAMINER INITIAL	OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)	
	A116	Rovamo, J., Virsu, V., "An Estimation and Application of the Human Cortical Magnification Factor," <i>Exp Brain Res.</i> , Vol. 37, 1979, pp 495-510.
	A117	Rubin, M.L., <i>Optics for Clinicians</i> , Gainesville, TRIAD Scientific Publishers, 1974, pp 119-123.
	A118	Shannon, R.V., "A Model of Safe Levels for Electrical Stimulation," <i>IEEE Transactions Biomed. Eng.</i> , Vol. 39, 1992, pp 424-426.
	A119	Smith, J., "Creating a Bionic Eye", ABC News, 11/5/98, 3 pages.
	A120	Stone, J.L., Barlow, W.E., Humayun, M.S., de Juan, E., Jr., Milam, A.H., "Morphometric Analysis of Macular Photoreceptor and Ganglion Cells in Retinas with Retinitis Pigmentosa," <i>Arch. Ophthalmol.</i> , Vol. 110, 1992, pp 1634-1639.
	A121	Sze, S.M., "Physics of Semiconductor Devices", 2 nd Ed., A Wiley-Interscience Publication, John Wiley & Sons, (undated).
	A122	Tasman, E., ed. <i>Duane's Foundations of Clinical Ophthalmology, Volume 3</i> , Philadelphia, Lippincott, 1992; chapter 13:20-25, chapter 60:1-112.
	A123	Terr, L.I., Linthicum, F.H., House, W.F., "Histopathologic Study of the Cochlear Nuclei After 10 Years of Electrical Stimulation of the Human Cochlea," <i>Am. J. Otolaryngol.</i> , Vol. 9, 1988, pp 1-7.
	A124	Tomita, T., "Electrical Activity of Vertebrate Photoreceptor," <i>Q. Rev. Biophys.</i> , Vol. 3, 1970, pp. 179-222.
	A125	Zrenner, E., <i>et al.</i> , "The Development of Subretinal Microphotodiodes for Replacement of Degenerated Photoreceptors", <i>Ophthalmic Res.</i> , 1997, pp. 269-280.
	A126	Chow, A.Y., and Chow, V.Y., Copy of U.S. application serial No. 09/564,841 filed on May 4, 2002, 29 pages.

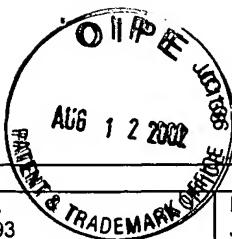
RECEIVED

AUG 13 2002

TECHNOLOGY CENTER R3700

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



TRANSMITTAL LETTER			Case No. 3614/63
Serial No. 10/056,793	Filing Date January 23, 2002	Examiner Unknown	Group Art Unit 3762
Inventor(s) A. Chow et al.			
Title of Invention Methods For Improving Damaged Retinal Cell Function			

TO THE COMMISSIONER FOR PATENTS

Transmitted herewith is Transmittal Letter (in duplicate); Information Disclosure Statement; PTO Form 1449; One Copy of References A1-A126.

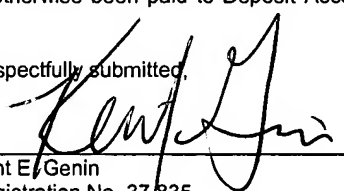
- ☐ Small entity status of this application under 37 CFR § 1.27 has been established by verified statement previously submitted.
- ☐ A verified statement to establish small entity status under 37 CFR §§ 1.9 and 1.27 is enclosed.
- ☐ Petition for a _____ month extension of time.
- ☐ No additional fee is required.
- ☐ The fee has been calculated as shown below:

	Claims Remaining After Amendment		Highest No. Previously Paid For	Present Extra
Total		Minus		
Indep.		Minus		
First Presentation of Multiple Dep. Claim				

Small Entity		or	Other Than Small Entity	
Rate	Add'l Fee		Rate	Add'l Fee
x \$9=			x \$18=	
x 42=			x \$84=	
+\$140=			+ \$280=	
Total add'l fee	\$		Total add'l fee	\$

- ☐ Please charge Deposit Account No. 23-1925 (BRINKS HOFER GILSON & LIONE) in the amount of \$_____. A duplicate copy of this sheet is enclosed.
- ☐ A check in the amount of \$_____ to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 associated with this communication or credit any overpayment to Deposit Account No. 23-1925. A duplicate copy of this sheet is enclosed.
- ☒ I hereby petition under 37 CFR § 1.136(a) for any extension of time required to ensure that this paper is timely filed. Please charge any associated fees which have not otherwise been paid to Deposit Account No. 23-1925. A duplicate copy of this sheet is enclosed.

Respectfully submitted,


Kent E. Genin
Registration No. 37,835
Attorney for Applicant

RECEIVED

AUG 13 2002

TECHNOLOGY CENTER H3700

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on August 5, 2002.

Date: 8/5/2002

Signature: 